April 15, 2002

Ref 8EPR-PS

To Jim Christiansen, Remedial Project Manager
Libby, Montana

From Mary Goldade, Regional Chemist
Ecosystems Protection and Remediation

Subject Review Comments for the Draft Sampling and Analysis Plan for the Contaminant Screening Study

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At your request, a review of the *Draft Sampling and Analysis Plan – Remedial Investigation Contaminant Screening Study Libby Asbestos Site Operable Unit 4* (April 2002) prepared by CDM, Inc (CDM) was performed

The SAP was reviewed for inclusion of minimum components prescribed in the *EPA QA/G-5 Guidance on Quality Assurance Project Plans*, the *EPA QA/G-4 Guidance for the Data Quality Objectives Process* and the *Region 8 Quality Management Plan* Generally, four major areas are evaluated during this review These are summarized below

1 Data Quality Objectives (DQOs)
2 Field Sampling
3 Laboratory Analysis
4 Quality Assurance/Quality Control (QA/QC) Procedures

My chemistry technical review comments are attached Comments pertaining to the overall design of the document are summarized under the General Comments section Comments regarding the detail of the SAP are provided under the Specific Comments section These comments serve as my technical recommendations to you which I hope will be helpful to you when making management decisions about the site Thank you for the opportunity to review this document

Attachment (1)

cc Jeff Montera (CDM)

General Comments

The SAP is well organized and includes many key components necessary to support the CSS investigations. Areas that would benefit from further discussion and/or additions to the SAP are summarized below. They will not be discussed in detail as I believe you plan to address this with CDM.

1. Data Quality Objectives. The SAP generally provides the components of the data quality objectives (DQOs) with the exception of supporting scientific justification or rationale for selected objectives. Examples where further rationale for the outlined study provisions include:
    a. Reasons/purpose for selecting soil depths for surficial and composite samples (0-1 inch bgs and 0-6 inch bgs, respectively). That is, what's the goal of the respective soil sampling? Describe so that soil depths are justified.
    b. Reasons/purpose to achieve a 0.1% detection limit for total LAA content.
    c. Description of how composite sample area compares with the number of grabs samples that make up the composite. Further guidance should be given on how commercial properties will be dealt with so that individual field teams are not left to make it up as they go. delineate between commercial and residential lands and how the data will be used (precisely what king of decision-making?)

2. Quality Assurance Contingency Plans. The SAP describes actions planned to be taken during field sampling to ensure the project goals are met. Similar contingency plans should be considered and then discussed in other areas such as laboratory analyses, laboratory performance, etc. This section would be improved by including flow diagrams for each activity (field sampling, sample preparation, sample analysis, etc.) that show steps and its respective contingency plan.

Specific Comments

1. Section 1, Introduction, bulleted list, page 1-1. For each of the listed findings, the report in which the statement is made/discussed should be referenced. In addition, the Phase II QAPP should be include in the list of references.

2. Section 2.2, Site History, last paragraph, page 2-2. Suggest removing the second sentence.

3. Section 2.4, Contaminant of Concern, 1st paragraph, last sentence, page 2-3. While I imagine the implication is that tremolite is considered the most toxic of the six currently regulated asbestiforms, this statement should be removed as tremolite is only a part of the apparently very toxic LAA solution series.

4 Section 3 3 1 2, Study Area Grid, 1st bullet, page 3-3 Change 'and to "and/or" and insert "(as appropriate)" following "sampled"

5 Section 3 3 2 2, Reconnaissance Team, page 3-4 Will there be more than 1 recon team? If so add the word "each" at the end of the 2nd sentence Otherwise, it seems that it will be difficult for a single recon team to complete 25 visits/day Consider adding another team or two

6 Section 3 3 3 1, Verbal Interview, Conduct Interview, 2nd sentence, page 3-5 Revise to have a complete sentence

7 Section 3 3 3 2, Soil Sampling, Segregate Land Use Areas, page 3-6 Figure 3-2 shows the driveway as part of the front yard sampling It is likely that the driveway material, if sampleable, will be different than the yard It should be included as a separate land use area In addition, indicate that CDM field teams will section yards into additional zones at their discretion, but consistently among teams

Finally, 5-point composite samples are prescribed for ½ of a residential lot This is considerably smaller than the ½ acre maximum size limit for larger parcels While it is reasonable to limit the area from which composites will be collected, (if feasible) the number of grabs per composite sample should be increased for larger land parcels so that the area composite ratio are comparable

8 Section 3 3 3 2, Soil Sampling, Visual Inspection, 2nd sentence, page 3-6 Revise " approximate volume *by measuring and noting source location length, width and depth* and *anecdotal estimates* of how long the contaminated "

9 Section 3 3 3 2, Soil Sampling, Determine Sampling Locations, 1st paragraph, page 3-7 This section states that the "CDM field team will use professional judgement in determining how soil samples will be collected in order to adequately characterize each property " While this is true, the SAP must include clear instructions and supporting rationale for the area composite ratio needed to support project goals in characterizing residential and commercial lands

10 Section 3 3 3 2, Soil Sampling, Determine Sampling Locations, 2nd paragraph, page 3-7 See General Comment #1 Note that sampling for human health risk assessment (HHRA) purposes, a depth of 0-2 inch for surficial soils is appropriate While our immediate goal is not in support of HHRA, it may be prudent to sample at that depth interval so that archived samples may be used in support or future HHRA needs

11 Section 3 3 4, Sample Analysis and Data Validation, page 3-7 The process in letter generation is relatively unclear Describe the flow and indicate responsible parties in this

effort For example, it is presumed that EPA CIC will draft the letter, but a consultant (CDM?) will generate the letters using an automated process that is driven from the site database

12 Section 3 4, Qualitative Field Checks, page 3-9 The screening field checks described in this section is a good idea In order to document this process is completed, the IFFs should include a signature line for when this review takes place The line should include the frequency requirement, so that any independent auditor who reviews the forms would understand a "blank" signature line is appropriate for all but 2% of IFFs Include a process for corrective actions to be taken as necessitated by the findings of this review

13 Section 3 4, Field Duplicates and Preparation Duplicates of Soil Samples, page 3-9 These sections state a frequency of 5% Recommended is a statement that indicates that even at this frequency this is a large number of samples given the number of residences planned in the investigation In Section 5, add a statement such as "The frequency may be reduced as initial information about the homogeneity of samples is understood If the required frequency is adjusted, the change and supporting rationale will be documented as described in Section___ "

14 Section 3 4, Field Form Completion Checks, page 3-9 The field form completion checks described in this section is a good idea In order to document this process is completed, the IFFs should include a signature line for when this review takes place

15 Section 3 4, Field Audits, page 3-9 This audit process suggested here is appropriate Who will perform this audit and how will the audit be documented? Is this audit different than the qualitative field checks? Provide these details in the appropriate section Also, rather than (or in addition to as budget allows) scheduled 2nd audits, I recommend opportunistic audits as necessitated by the findings of the qualitative field checks by the CSS task leader

16 Section 4, SOPs list, page 4-1 Assign a unique number and document here the new SOPs prepared by CDM for data validation and field data sheet completion

17 Section 4 5 2, Rinsate Samples, page 4-4 Rather than simply state that EPA has directed it, this section must state rationale for rinsate sample collection That is, the purpose is to document whether significant cross-contamination is occurring as a result of using equipment that is decontaminated between samples Further, this section must note how the data will be evaluated Specifically, measurement of a single fiber in the rinsate does not necessarily there is a concern with the analytical results for samples associated with the rinsate CDM should calculate the number of fibers that must be found in the rinsate that translates into a significant enough number that investigative samples normally reported as not-detected at 0 1% total LAA content would be compromised as a result of cross-contamination Finally, in thinking about this more, I think this is an area where you ll

want continued monitoring that cross-contamination is not an issue over time However, I think that if after the initial evaluations show negligible fiber quantities in the decon water you may scale the frequency back significantly

18 Section 5 1 2, CDM Management, H&S Coordinator, page 5-3 Add HASP updates responsibility, as appropriate

19 Section 5 1 2, CDM Management, CSS Task Leader, page 5-5 Add " and documenting that for the records "

20 Section 5 1 3, Quality Assurance Organization, 1st bullet, page 5-5 Add staff observations " are documented and implemented"

21 Section 5 4 2, Data Management Objectives, 2nd sentence, page 5-12 Add " in a real-time manner such that appropriate corrective action procedures can be implemented

22 Section 5 4 2 2, Precision, page 5-13 Add another data evaluation tool for duplicates All original sample results and their respective duplicates should be presented graphically and linear regression performed

23 Section 5 4 2 2, Accuracy, page 5-13 Add a discussion of Performance Evaluation (PE) and confirmation samples here

24 Section 5 4 2 2, Completeness, page 5-14 In the most recent version of the QA/R-5, PARCC is no longer a requirement for QAPPs Remove the completeness goal as it implies that an sampling goals include an additional 10% of the total desired in order to meet completeness goals The current design does not appear to support this

25 Section 5 4 2 2, Sensitivity, last sentence, page 5-15 Replace "grid counts" with 'grid openings"

26 Section 5 4 2 4, Laboratories, page 5-15 This section names specific laboratories who will be participating in the CSS I am not aware of Reservors current capabilities in the areas of SEM and IR analysis This section should indicate that labs may be added or deleted based on their ability to perform prescribed analyses In addition to the requirements that define a suitable laboratory, add provisions for volunteer PE samples analysis These analyses must be performed before any samples are submitted to the lab to confirm the lab's capabilities and may be subsequently submitted at regular intervals

27 Section 5 4 2 4, Analytical Methods, page 5-16 Add reference to the IR method here

28 Section 5 4 2 4, Reporting Limits, page 5-16 Replace "grid count" with "grid opening count" Clarify reporting limit definition by specifying the confidence surrounding the RL

That is, it's not an MDL (which is the value of which there is 95% confidence that the LAA concentration is not zero) but rather a quantitation limit

29 Section 5 4 2 4, Quality Control Analyses, Confirmation Samples, page 5-16 First sentence make IR results "less than or equal to 0 5% " " and less than or equal to 1% " Last sentence Allow for reassessment with RPM of how to proceed rather than an inflexible requirement of stated frequency and arbitrary precision requirements Also, if possible indicate that initial evaluations should strive to represent the full concentration range over (≤0 1% to ≥1%) Also EPA QA personnel is mention here for the first time, rename this to RPM or identify the EPA QA personnel and their responsibilities in the appropriate section

30 Section 5 4 2 4, Quality Control Analyses, Rinsate Samples, page 5-17 See previous comment in Section 4

31 Section 5 5, Special Training Requirements, page 5-17 Add reference to laboratory training and appendix D

32 Table 5-1, SEM/IR Splits Change 1st 500 samples to ≤0 5% for 20% of IR & ≤1% for 10% of IR

33 Table 5-1, Laboratory Splits Frequency 2% (1 in 50) per sample analysis type (e g , IR SEM)

34 Figure 5-1 This figure would be improved if direct lines of communication were shown and relationship of personnel to CDM's QAM The QAM should be at the same level and independent of the CDM project manager

35 Section 6 3 2, Laboratory Custody Procedures and Documentation, page 6-3 Include in this section a list of raw data that are required for each data package

36 Section 6 3 3, Corrections to and Deviations from Documentation, page 6-3 Include in this section a discussion of the process for modifying documentation associated with the SAP Include a copy of an updated Record of Deviation/Request for Modification Form

37 Section 6 4 1, Laboratory Quality Assurance Program, page 6-3 Refine this section to state that the laboratory will comply with the requirements outlined in the SAP and associated documentation Reference to adherence to EPA methods is not necessarily appropriate for these project goals A discussion about using standardized sample collection methods is more appropriate in the FSP rather than a section describing laboratory QAPs

38 Section 6 5 2 1, Laboratory Quality Control Samples, page 6-4 This section is silent on

precision and accuracy requirements for the named QC samples Indicate what QC samples are appropriate for each planned method and identify what (if any) precision and accuracy requirements are established If none are established, define the procedure in which this will be accomplished over the course of this project

39 Section 6 5 2 2, Laboratory Quality Control Checks, page 6-4 Include an allowance for analysis of PE samples Move the last sentence in this section to the next (6 5 3) and expand on the planned process

40 Internal Quality Control Checks, page 6-5 For simplification remove the field audit discussion and refer to the section in 4 that outlines the QC checks planned Outline the QA process for lab data and data management (and others as appropriate) here, but divide into subsections for ease of reading

41 Section 6 7, page 6-5 Note that it may not be possible for some standards to be traceable to EPA Review this statement and indicate which standards will be traceable and what conditions are appropriate for the other cases

42 Section 7 1, last 2 paragraphs, page 7-1 While the RPM will approve PE samples or lab audits, CDM's role is to track lab quality and to recommend when these actions are appropriate CDM should indicate this and suggest their QA contingency plans (see General comment)

43 Section 8 1, page 8-1 Note that as initial data are received, it may be appropriate to include a qualification process that indicates whether the J qualifier results in a high or low bias Include provisions for this Additionally, a frequency of 100% data validation on data generated is expensive and may be unnecessary after initial evaluations are complete Rather a reduced frequency to a minimum of 10% may be appropriate at some point Adjust language to indicate these provisions

44 Section 8 2, page 8-1 Reconciliation of DQOs should include not only a data quality assessment (DQA), but also a review the data for adherence to original DQOs

45 SOP 1-2, COC Form, Analysis Request Footer Change CSS SEM and IR SOP references appropriately

46 Appendix D Include updated version of the Laboratory Training Outline

Jim C Libby CSS SAP Comments

Overall I think the document gets us the data we need and the approach is sound and consistent with my guidance However the writing was at times lacking In other words you got the who what where when & how fine but the why is lacking Most of my comments are editorial and get at more clearly detailing why we are doing what we are doing

1 Section 1 Page 1-1 5th paragraph, last sentence Rephrase The major concern with LAA is the content of asbestiform minerals of the richterite winchite tremolite/actinolite solution series Only a fraction of LAA is tremolite most is richterite and winchite

2 Section 1 Page 1-2 1st full paragraph. Rephrase The results of the Phase I and Phase II investigations clearly show that LAA source materials when disturbed release significant amounts of respirable LAA fibers LAA sources may include primary sources such as zonolite attic insulation (ZAI) vermiculite products and waste and soils contaminated with greater than 1% LAA or secondary sources such as soil or dust that are contaminated with LAA Because LAA containing vermiculite products have been used randomly at unknown properties in the past EPA has determined that each property in the Libby Valley requires screening for potential sources of LAA The CSS will use a combination of visual inspections verbal interviews and outdoor soil sampling to screen for the presence of potential sources of LAA in areas where exposure is most likely to occur

3 Section 1 1 Page 1-3 Rephrase The primary objective of this investigation is to determine the presence or absence of potential LAA sources at each property within the study area There are several secondary objectives including

- identification of properties requiring immediate cleanup (e g containing primary sources)
- identification of properties requiring further investigation, such as indoor dust sampling
- quantification of relative LAA abundance in soils (weight %)
- recording circumstances at specific properties which may serve to increase exposure or affect remediation
- examining data for spatial trends across the study area

The CSS results will support future risk-based investigation and remedial decisions on a property by property basis

4 Section 2 2 page 2-2 Typo – last sentences of incomplete paragraph at top of page are repeated in the 1st full paragraph just below

5 Section 2 2 page 2 2 last sentence 3rd full paragraph Should be were affected

6 Section 2 2 page 2-2 Last paragraph Rephrase ' Future work in Libby is proceeding to two fronts First ERB continues to remove previously identified primary outdoor source areas and is also considering the removal of ZAI from buildings in the Libby Valley Second pursuant to the proposal of the Libby Asbestos Site to the National Priorities List (NPL) in February 2002 the EPA Superfund Remedial Program has initiated a Remedial Investigation (RI) of which the CSS is the first phase The CSS will identify additional properties containing primary sources which require immediate cleanup as well as identifying properties which may require further risk-based investigation under the RI

7 Section 2 4 Page 2-3 1st paragraph, last sentence Rephrase Tremolite asbestos a form which is closely related with the amphibole asbestos in Libby vermiculite is considered by many to be the most toxic Also add additional text While some chrysotile asbestos is likely present in the study area, it is not due to site-related contamination and is not considered a contaminant of concern The CSS will not screen for chrysotile or other forms of asbestos – only LAA If other contaminants are discovered the property owner will be properly advised " Also a third bullet should include regular lung cancer Even though this type of cancer is not specific to asbestos exposure it is caused by asbestos exposure

8 Section 3 1 Page 3-1 Rephrase this section The CSS will use a combination of visual inspections verbal interviews and outdoor soil sampling to identify both primary and secondary sources of LAA within the study area Screening and sampling will focus on areas where vermiculite products are most likely to be encountered (e g attic insulation, garden soil amendments) and where disturbance/exposure is most likely to occur (e g near surface soils as opposed to soil at depth) Results of the investigation will be used to classify properties (or portions of properties) within the study area with the following designations

- Property is clean (e g no indication of primary or secondary sources inside or outside)
- Property has primary sources of LAA and immediate cleanup activities may be conducted
- Property does not have primary sources of LAA but there are indications that secondary sources are or may be present Further investigation may be required to determine if cleanup activities are necessary

9 Section 3 2 Page 3 1 Delete 2nd sentence (Large commercial) Add language at end of paragraph The study area boundary may be adjusted as the extent of contamination becomes clearer Also specific properties with unique or complex circumstances (e g large or many buildings) may be addressed with modified sampling approach slightly different than the approach detailed in this SAP An addendum to the SAP will be prepared for such cases '

10 Section 3 3 1 3 This section should be part of Section 3 3 2 Public Awareness It should be stated that EPA will solicit and welcome requests of special scenarios which may require priority scheduling and your description is how it will be handled

11 Section 3 3 3 Bullets Add a bullet for visual inspection

12 Section 3 3 3 1 and Section 3 3 3 2 I would like a separate section for visual inspection – as it is written inspection for ZAI is included under verbal interview and inspection for other source materials is included in soil sampling There should be (1) an interview section detailing information we can only get from asking (2) a visual inspection section detailing information we can get from seeing or can verify by seeing and (3) a soil sampling section, which looks for outdoor sources we can t see

13 Section 3 3 3 2 Page 3-6 The "Segregate Land Use Areas discussion should refer again to Figure 3 2

14 Section 3 3 3 2 Page 3-7 last paragraph of Determine Sampling Locations It should be explained why the sample depths were chosen Relate it to the site conceptual model Mechanical disturbance (and hence release and exposure) to the 6 inch depth is likely in areas such as gardens or play areas (rototilling digging) whereas mechanical disturbance is only likely on the surface for grassy areas (mowing etc)

15 Section 3 3 4 1st sentence This is the first time the analytical methods are described but it is done so briefly and casually It should be clearer up front what the methods are what they can or can t do and why they were chosen Some hints IR is a an efficient presence/absence technique with a relatively low detection limit – that s what we are trying to do SEM is a less efficient presence/absence technique but has a much lower detection limit and allows some visual description of the fiber morphology

16 Section 3 4 – Rewrite as I said What could go wrong and what steps are we taking to make sure it doesn t

17 Section 5 1 – Does Volpe need a section? What are their roles and who are their people?

18 Section 5 4 1 DQO s – Needs redone - poor

19 Sections 5 6 7 8 – QA/QC plan – needs redone as I said – what can go wrong

Dan Strausbaugh
04/16/02 11 42 AM

To Jim Christiansen/EPR/R8/USEPA/US@EPA
cc azd9@cdc gov Dan Strausbaugh/MO/R8/USEPA/US@EPA
Subject SAP Review Completed

Jim

Attached are the results of Jill Dyken s review of the draft SAP Please contact me (or Jill directly) if you or your staff have any questions/comments

Thanks

DAn Strausbaugh
ATSDR/Montana Rep
(406) 457 5007
Forwarded by Dan Strausbaugh/MO/R8/USEPA/US on 04/16/2002 11 40 AM

Dyken Jill J
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To Dan Strausbaugh/MO/R8/USEPA/US@EPA
cc
Subject SAP Review Completed

Hi Dan,

I finished my review of the Libby Asbestos Site Draft Sampling and Analysis Plan I thought it was well organized and well-written I had no substantive comments My only question for Jim is, on p 5-15, the laboratories listed are off-site I thought the analysis was going to be done in the lab in Libby Maybe the text should include a note that the address is for the corporate facilities, and actual analysis may be performed elsewhere

Please pass this message on to Jim Thanks!

Jill

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